



C16-EC-402

**6436**

**BOARD DIPLOMA EXAMINATION, (C-16)  
OCTOBER/NOVEMBER—2023  
DECE – FOURTH SEMESTER EXAMINATION**

PROGRAMMING IN C AND MATLAB

Time : 3 Hours ]

[ Total Marks : 80

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**PART—A**

3×10=30

- Instructions :** (1) Answer **all** questions.  
(2) Each question carries **three** marks.  
(3) Answers should be brief and straight to the point and shall not exceed five simple sentences.

1. List the data types of C language.
2. List the arithmetic operators in C.
3. List three types of iterative statements supported by C.
4. Differentiate between if and if else statements in C.
5. List three functions used for writing string.
6. Define a pointer and write the syntax to declare a pointer.
7. How to get the size of a structure?
8. State the use of a union.
9. Write the syntax of for loop in MATLAB.
10. State the need for MATLAB in solving engineering problems.

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## PART—B

10×5=50

- Instructions :** (1) Answer *any five* questions.  
(2) Each question carries **ten** marks.  
(3) Answers should be comprehensive and criterion for valuation is the content but not the length of the answer.

11. List various types of conversion techniques in C and explain them.
12. What is the use of switch case statement? Write a program in C to show the use of switch statement.
13. Write a C program to find the sum of two matrices.
14. Explain string manipulation functions strcat(), strchr(), strcmp(), strcpy().
15. Define recursion and write a C program using recursive function.
16. Explain initialization and accessing the members of a structure with an example.
17. Explain the use of preprocessor directives with examples.
18. Explain the matrix operations addition, subtraction, multiplication and transpose of a  $2 \times 2$  matrix in MATLAB with example.

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